

Please replace the paragraph beginning at page 6, line 14, with the following rewritten paragraph:

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--To get purified IgY against dental caries bacteria, apply 4.0ml (10 mg/ml) of crude IgY on "DEAE-Sephadex A50" column (2.5x35cm), elute with pH 7.0, 0.01M of phosphate buffer containing 0.06M of NaCl, 20ml/h, 5.0ml each fraction, pour each peak, estimate antibody activity with "ELISA". Keep the active eluates, eliminate bacteria by 0.22µm membrane filtration and lyophilize.--

Please replace the paragraph beginning at page 7, line 17, with the following rewritten paragraph:

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--Add IgY of the present invention and potassium sorbate, which final concentrations are 0.1% and 0.015% respectively, into pasteurized fresh milk, homogenize with sterile homogenizer. Pour into sterile sucking bottles and store at 4°C.--

IN THE CLAIMS:

Please cancel claims of record 13 to 27 without prejudice or disclaimer and replace with the newly drafted claims as follows:

28. A preparation method of immunoglobulin Y (IgY) against dental caries bacteria, including the steps of:

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(a) preparing streptococcus mutans antigen as antigen bacteria by the steps of;

(a1) separately cultivating said streptococcus mutans type c and type d in a culture medium for 2 to 3 days;

(a2)collecting bacteria by centrifugation;

(a3)washing said bacteria 4 to 6 times with 0.05-0.2M of phosphate buffered saline, pH 6-7, and heating at 50-60°C for 25 to 35 minutes;

(a4) mixing said streptococcus mutans type c and type d in a ratio of 2:1; and

(a5) adding Freund's adjuvant equal to total volume of said streptococcus mutans type c and type d with high speed homogenized;

(b) immunizing hens with said streptococcus mutans antigen to obtain eggs with active antibody from said hens for 13 months;

(c) extracting a crude IgY from said eggs by water dilution method;

(d) applying said crude IgY on "DEAE-Sephadex A50" column and eluting with phosphate buffer containing 0.07M of NaCl to obtain eluates of protein peak;

C8 (e) applying said eluates of protein peak on Sephadex G200 column and eluting with phosphate buffer containing 0.1M of NaCl to obtain new eluates of protein peak;

(f) collecting the said new eluates of protein peak;

(g) estimating antibody activity of the said eluates of protein peaks with "ELISA"; and

(h) eliminating bacteria by 0.22 μ m membrane filtration and lyophilizing to achieve a purified IgY against dental caries bacteria.

29. The preparation method, as recited in claim 28, wherein the step (b) comprises the steps of:

(b1) immunizing said hens by three hypodermic injections of 1×10^9 /ml of said streptococcus mutans antigens each time at two weeks intervals;

(b2) collecting and sterilizing said eggs from 20th day after said first hypodermic injection; and

(b3) taking out yolks from said eggs by sieve.

30. The preparation method, as recited in claim 28, wherein the step (c) comprises the steps of:

(c1) evenly stirring said yolks and diluting with 4-6 fold of distilled water to obtain a diluted yolk solution;

(c2) adjusting said diluted yolk solution to pH 4.5-6.5;

(c3) standing said diluted yolk solution at 3-5°C for 20-30 hours;

(c4) centrifuging said diluted yolk solution for 20-30 minutes to obtain a supernatant; and

(c5) concentrating said supernatant by ultrafiltration, eliminating bacteria and lyophilization to achieve said crude IgY.

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31. The preparation method, as recited in claim 29, wherein the step (c) comprises the steps of:

(c1) evenly stirring said yolks and diluting with 4-6 fold of distilled water to obtain a diluted yolk solution;

(c2) adjusting said diluted yolk solution to pH 4.5-6.5;

(c3) standing said diluted yolk solution at 3-5°C for 20-30 hours;

(c4) centrifuging said diluted yolk solution for 20-30 minutes to obtain a supernatant; and

(c5) concentrating said supernatant by ultrafiltration, eliminating bacteria and lyophilization to achieve said crude IgY.

32. A preparation method of immunoglobulin Y (IgY) against dental caries bacteria, including the steps of:

(a) separately cultivating said streptococcus mutans type c and type d in a culture medium for 2 to 3 days;

(b) collecting bacteria by centrifugation;

(c) washing said bacteria 4 to 6 times with 0.05-0.2M of phosphate buffered saline, pH 6-7, and heating at 50-60°C for 25 to 35 minutes;

(d) mixing said streptococcus mutans type c and type d in said ratio of 2:1;

(e) adding Freund's adjuvant equal to total volume of said streptococcus mutants type c and type d with high speed homogenized;

(f) immunizing said hens by three hypodermic injections of 1×10^9 /ml of said streptococcus mutants antigens each time at two weeks intervals;

(g) collecting and sterilizing said eggs from 20th day after said first hypodermic injection;

(h) taking out yolks from said eggs by sieve;

(i) evenly stirring said yolks and diluting with 4-6 fold of distilled water to obtain a diluted yolk solution;

(j) adjusting said diluted yolk solution to pH 4.5-6.5;

(k) standing said diluted yolk solution at 3-5°C for 20-30 hours;

(l) centrifuging said diluted yolk solution for 20-30 minutes to obtain a supernatant;

(m) concentrating said supernatant by ultrafiltration, eliminating bacteria and lyophilization to achieve said crude IgY;

(n) applying said crude IgY on "DEAE-Sephadex A50" column and eluting with phosphate buffer containing 0.07M of NaCl to obtain eluates of protein peak; and

(o) applying said active eluates on Sephadex G200 column and eluting with phosphate buffer containing 0.1M of NaCl to obtain new eluates of protein peak.

33. The preparation method, as recited in claim 32, after the step (o), further comprising the steps of:

(p) collecting the said new eluates of protein peak;

(q) estimating antibody activity of protein of the said protein peaks with "ELISA"; and

(r) eliminating bacteria by 0.22 μ m membrane filtration and lyophilizing to achieve a purified IgY against dental caries bacteria.

34. A combination against dental caries bacteria, comprising of effective components composed with IgY to dental caries bacteria and, at least, one of both potassium sorbate and sodium benzoate.

35. The combination, as recited in claim 34, wherein over 0.05% of additive IgY amount, additive amount potassium sorbate and sodium benzoate is 0.005-0.02% respectively.

36. The combination, as recited in claim 35, wherein the additive IgY amount is 0.05-0.2%.

37. The combination, as recited in claim 36, wherein as liquid product used for oral cavity is packaged in pocket atomizer for spraying usage.

38. The combination, as recited in claim 36, wherein as liquid food the combination is packaged in sucking bottle.
